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is said to take great pleasure in his fear experiences, but this may be a case of mere reaction from over-refined emotion, or it may be artistic emotion. The whole subject demands a large and detailed treatment.

This volume adds little to our knowledge. M. Ribot refers the very highest emotions to the James-Lange theory, but only in a very general way. Chapter XI. is an original study of affective memory and contains some interesting matter. I incline to believe that the memory of feeling is a far more general fact than M. Ribot makes it, and that, since the interesting is the rememberable, it is the core of all memory. All living in the past is filled with resuscitated feelings, both recalled and recurrent, and both associated with images and with correlated feelings. The difficulty in the study of affective memory is to discriminate between the new and the old, between the anger resuscitated with the thought of the insult and the anger provoked by the thought.

Æsthetic feeling is, as usual, referred to superfluity of energy. However, this theory must explain why great artists and poets are so often starvelings. The truth is, superfluity expends itself in the easiest channel for the individual, which for most men is apt to be hunting or fishing, or fighting. Superfluity may be one condition of rise and progress of æsthetic, just as there must be a certain fund of available energy for the rise of any higher emotion, but it cannot in itself explain æstheticism.

On the whole, while we can commend M. Ribot's work as a useful summary, we can not speak highly of its originality, its thoroughness or its fairness of tone. It is often narrow and dogmatic, and though the author is sufficiently eclectic in his field it is an eclecticism little vindicated. HIRAM M. STANLEY.

#### SCIENTIFIC JOURNALS.

AMERICAN CHEMICAL JOURNAL, JULY.

*Oxidation of Sodium Sulphide and Hydrosulphide to the Sulphate by Electrolysis:* By F. W. DURKEE. Sodium sulphide and hydrosulphide are completely oxidized to sulphate when a current is passed through the solution. When carbon or copper electrodes were used, no oxida-

tion took place; but when platinum ones were substituted, the formation of sulphate was quite rapid. When the current is first passed through, considerable hydrogen is set free at the negative electrode; but very little oxygen escapes at the positive electrode. The oxygen is used up in oxidizing some of the sulphide to thiosulphate, and this in turn to sulphate, setting sulphur free. This free sulphur, which separates as a white cloud, is partly dissolved in the sulphides forming polysulphides, which color the solution yellow. These polysulphides are in turn oxidized, and so it continues until all has been oxidized to sulphate, which point is reached when no further separation of sulphur takes place. The presence of these different products was shown by quantitative determinations of the substances present at different stages of the oxidation. Both direct and alternating currents were used, but the former were found more suitable for the purpose.

*A Method for Obtaining Crystalline Silicon:* By G. DE CHALMOT. By heating a mixture of silica, carbon and oxides of metals in an electric furnace, crystals of silicon can be obtained. These can be obtained in almost pure condition by treating the product with hydrochloric and hydrofluoric acids. When oxide of manganese is used, a manganese silicide having the composition  $MnSi_2$  is formed.

*On Some Mercury Salts of the Anilides:* By H. L. WHEELER and B. W. MCFARLAND. So little attention had been given to the methods of formation and reactions of these compounds that no conclusions could be drawn as to their structure. In this paper the authors give the results of their work and conclude that the metal is joined to the nitrogen and not to the oxygen, as has been suggested. When formanilide is treated with mercuric bromide, a mercuric formanilide is formed; and when this is treated with benzoyl chloride, halogen mercury compounds are formed, which are undoubtedly nitrogen derivatives. Nitrogen substituted anilides, whose reactions can only be explained on the supposition that the metal is joined to nitrogen, are also formed.

*On the use of Antimony Trichloride in the Synthesis of Aromatic Ketones:* By W. J. COMSTOCK. In some cases antimony trichloride is preferable, as

a condensing agent, to aluminium chloride, on account of its cheapness and the fact that it is more stable and can be easily recovered again. It cannot be used, however, with low-boiling chlorides, and also fails in some cases where aluminium chloride can be used, as in the formation of triphenylmethane from chloroform and benzene. Several examples are given of the different classes of compounds with which it can be used and the yields as compared with the other method.

*The Action of Sodium on Aldehyde:* By P. C. FREER. On account of the great instability of the compound formed by the action of sodium on aldehyde, the latter is mixed with benzoyl chloride and then added to the sodium in ether. The compound formed can be isolated in pure condition and obtained as white crystals. Determinations of its composition, molecular weight and decomposition show it to be aldehydoaldol benzoate. The authors consider the product first formed by the action of sodium on aldehyde to be sodium aldehyde or sodium vinyl alcohol  $\text{CH}_2:\text{CHONa}$ . In this compound the metal is joined to the oxygen.

*On the Constitution of Some Derivatives of Formic Acid:* By P. C. FREER and P. L. SHERMAN, JR. Attention is called to the fact that formic acid, although classed with the acetic acid series, does not exhibit physical properties in conformity with the rest of the series. It is stated by some authors that this acid acts both as acid and aldehyde, but the evidence in favor of the latter is very slight. A study of sodium formylphenylhydrazine seems to show that there is neither a hydroxyl nor aldehyde group in it, while in the salts of formanilide there is evidence of the presence of a hydroxyl grouping. Different groups seem to have different influences and the evidence is not yet sufficient to draw any positive conclusions.

*Notes on New Apparatus:* By G. O. HIGLEY, B. J. HOWARD and P. C. FREER. Improvements are suggested in the old Hofmann apparatus for showing the electrolysis of hydrochloric acid, and in the Hofmann apparatus for demonstrating the volumes of oxygen and hydrogen which unite to form water vapor. A simple form of apparatus for distillation in a vacuum is also given.

*The Action of Metals on Nitric Acid:* By G. O. HIGLEY and W. E. DAVIS. In the present paper the authors give the results of the action of nitric acid on silver. In this case nitric oxide and nitrogen peroxide are formed and no nitrous oxide as with copper.

*On the Esterification of Halogen Substituted Acetic Acids:* By D. M. LICHTY. The author has continued his investigation of the esterification, using lower temperatures, and finds that the results depend on the mass-action of water and alcohol and also on the specific nature of the acid. Starting with acetic acid and introducing one, two, and three atoms of chlorine, he finds that the increase in chlorine influences the rate to a greater extent than it does the limit.

*The Constitution of the Acid Amides:* By A. LACHMAN. Some doubt has recently been thrown on the generally accepted structure of the amides, and while there seems to be evidence in some cases pointing to the occurrence of the normal amide structure in some compounds, in others it is in favor of the imido hydroxy structure. The author finds that the attempts made so far to test these ideas have failed on account of the great indifference of amides to all the reactions he tried.

*Chromic Hydroxide in Precipitation:* By H. E. PATTEN. Many hydroxides when precipitated carry down other substances with them and in some cases even decompose them. The present work is a study of the action of potassium hydroxide on chromium chloride in the presence of potassium sulphate. In all cases the precipitation was complete and no sulphate was carried down. Magnesium, calcium and ammonium sulphates behave in the same way; but chlorides and nitrates do not cause precipitation. When the sulphates are not present the hydroxide of chromium dissolves in the excess of alkali. He conceives of two reactions taking place, first a breaking up of the sulphate by the chromium hydroxide and the formation of a compound of sulphur trioxide and chromium sesquioxide, and second, a decomposition of this compound by water.

*An Empirical Relation Between Melting-point and Critical Temperature:* By F. W. CLARKE. The author draws attention to the ratio between

the melting point and critical temperature of a number of compounds, and shows how this ratio is constant for certain ones; but these belong to such widely different classes of compounds and the facts at hand are so slight that no generalizations can be drawn.

*Aluminium Alcoholates:* By H. W. HILLYER. When attempts were made to preserve some amalgamated aluminium by keeping it in a solution of mercuric chloride in absolute alcohol, it was found that the aluminium acted quite violently on the alcohol forming aluminium alcoholate. A number of alcohols were found to act in the same way and the subject is now being investigated by the author.

*The Conductivity of Solutions of Acetylene in Water:* By H. C. JONES. The author calls attention to the fact that the results published by Jones and Allen, showing acetylene to be considerably dissociated in water, are not correct. He has repeated the work and finds that it has a very slight conductivity. He attributes the previous error to some unknown impurity. This number contains reviews of the following books:

*Water Supply*, W. P. MASON; *A Dictionary of Chemical Solubilities*, A. M. COMEY; *Milk, Its Nature and Composition*, C. M. AIKMAN.

J. ELLIOTT GILPIN.

#### THE AUK.

THE *Auk* for July (Vol. XIII., No. 3) opens with an article by Herbert K. Job, on 'The Ducks of Plymouth County, Massachusetts,' wherein the author presents the results of many years' observations in a condensed report on the 28 species known to occur. Dr. Walter Faxon gives, with prefatory remarks, a list of nearly 200 drawings of Georgia birds made by John Abbot between 1790 and 1810. Some 160 species are represented, including several which were then unknown to science. Publication, or rather the lack of it, seems to have been Abbot's only bar to immortality as an ornithologist.

Mr. O. Widmann discourses pleasantly on, 'The Peninsula of Missouri as a Winter Home for Birds,' and Mr. A. W. Anthony gives evidence of the breeding of the Black-vented Shearwater off the coast of southern California

with other interesting notes on the habits of this species. In giving his 'Observations on *Histrionicus histrionicus* in Maine,' Mr. Arthur H. Norton writes of a comparatively little known species, while Mr. Ruthven Deane adds a page to the life history of the Passenger Pigeon, in which our interest increases as it 'takes its flight.' Notes from Bermuda, that refuge for feathered waifs and strays, are always of value, and in commenting on the Bermudan avifauna Dr. Prentiss tells of the recent colonization of the Mocking-bird and European Goldfinch. The latter was accidentally introduced in 1893 by escaping from a vessel at St. George's, and so favorable have the conditions proved that already it is quite common. The English sparrow, the most abundant resident species, is spoken of as 'aggressive, offensive and despised.'

Somewhat over a dozen pages are devoted to reviews of recent ornithological books and papers, and about an equal number to records of the capture of more or less rare species or brief original observations of unusual interest.

The colored plate of this issue is an excellent illustration of the handsome Ptarmigan (*Lagopus evermanni*), from Attu Island, described by Mr. D. G. Elliot in the January number.

#### NEW BOOKS.

*Prantl's Lehrbuch der Botanik.* Herausgegeben und neu bearbeitet von DR. FERDINAND PAX. 10th edition. Leipzig, Wilhelm Engelmann. 1896. Pp. x+406. M. 4.

*Grundriss der Entwicklungsgeschichte des Menschen und der Säugethiere.* DR. OSCAR SCHULTZE. Leipzig, Wilhelm Engelmann. 1896. Erste Hälfte Bogen 1-11. Pp. 176. M. 5.

*Studien zu Methodenlehre und Erkenntnisskritik.* FRIEDRICH DREYER. Leipzig, Wilhelm Engelmann. 1895. Pp. xiii+223. M. 4.

*Psychologische Arbeiten.* Herausgegeben von EMIL KRAEPELIN. Leipzig, Wilhelm Engelmann. Hefte I., II., III. Pp. 488. M. 12.

*Beiträge zur Psychologie und Philosophie.* Herausgegeben von DR. GÖTZ MARTIUS. Leipzig, Wilhelm Engelmann. Bd. I. Heft I. Pp. 159. M. 4.